for GM Linden NJD 002 186 690

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HULL

April 1, 2016

Mr. Gary Greulich
New Jersey Department of Environmental Protection
Northern Regional Office
7 Ridgedale Avenue
Cedar Knolls, NJ 07927

RE: Remedial Action Progress Report No. 19 for the Industrial #2 Redevelopment Area Portion of the Former General Motors (GM) Linden Assembly Plant, 1016 West Edgar Road, Linden, Union County, New Jersey 07036; DUK059.701.0203.

Dear Mr. Greulich:

On June 3, 2011, the New Jersey Department of Environmental Protection (NJDEP) approved the New Jersey Remedial Action Workplan and RCRA Corrective Measures Proposal Addendum No. 4 (RAWP) for the Industrial #2 Redevelopment Area of the Former GM Linden Assembly Plant (Site; SRP PI# 621084; Case Tracking Number: E20040531-Industrial). The June 3, 2011 approval letter requested a Remedial Action Progress Report for the Industrial #2 Redevelopment Area on/by September 30, 2011. Subsequent reports will be submitted on a quarterly basis.

As discussed during extensive correspondence with NJDEP, the industrial portion of the Former GM Plant, which includes the Industrial #1 and Industrial #2 Redevelopment Areas, was sold in late-2013 by Linden Development LLC to Duke Linden LLC (Duke Linden). Duke Realty Corporation is a primary member of both the former owner (Linden Development LLC) and new owner (Duke Linden) and will provide for consistent implementation of the previously-approved remedial strategy outlined in RAWP Addendum No. 4. The project team has remained unchanged since the last progress report.

As part of the property transaction, NJDEP assigned the following updated identification numbers for the industrial portion of the Former GM Plant which includes the Industrial #2 Redevelopment Area:

- Program Interest Number: 621084
- Case Tracking Number: E20040531-Industrial

This letter constitutes Remedial Action Progress Report No. 19 for the Industrial #2 Redevelopment Area. Hull & Associates, Inc. (Hull) has prepared this report on behalf of Duke Linden to summarize remedial activities completed on the Site between January 1, 2016 and March 31, 2016.

Requirements, according to N.J.A.C. 7:26E-6.6, are shown below in ***bold italics***, with Hull/Duke Linden's update following. The report certification required by N.J.A.C. 7:26E-1.5 is included in Attachment A.

1. ***NJDEP requires a description of each planned remedial action***
   - i. ***Scheduled to be initiated or completed within the reporting period;***
   - ii. ***Actually initiated or completed during the reporting period; and***
   - iii. ***Scheduled but not initiated or not completed during the reporting period, including the reasons for the noncompliance with the approved schedule.***

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Soil

As outlined in the approved RAWP, the remedial activities for soils on the Industrial #2 Redevelopment Area consist of the following:

a. Excavation of approximately 1,715 yd^3 of soil containing chemicals of potential concern (COPCs) at concentrations above applicable standards from AOI-7;

b. Establishing deed restrictions or environmental covenants to maintain commercial/industrial land use at the Site;

c. Regrading the site to achieve the grade necessary to support the proposed redevelopment;

d. Constructing building slabs, parking areas and roadways and placing one foot of clean soil over geotextile fabric in future greenspaces to preclude direct contact exposures to future receptor populations and/or provide cover to historical fill material; and

e. Surveying to demonstrate that all areas are covered with engineering controls (e.g., building slabs, parking areas and roadways) or one foot of clean soil.

The excavation activities within AOI-7 were completed in March and April 2012. A summary of the excavation activities, confirmatory sampling results, soil disposal and other details were provided in Quarterly Progress Report No. 4, dated June 30, 2012. As discussed in that report, the confirmatory sampling results indicate that the AOI-7 excavation activities successfully removed the petroleum-impacted soils and achieved the cleanup goals specified in the approved RAWP.

With the exception of the targeted soil excavation activities within AOI-7, the remedial activities are directly related to construction activities associated with the future redevelopment at the Site which is dependent upon finalization of agreements with end users. During the current reporting period, Duke Linden continued construction activities for Building 11. The Building 11 area will occupy Industrial # 2 Redevelopment Area and the remainder of the Industrial #1 Redevelopment Area.

Construction activities are being conducted consistent with the approved RAWP. Building 11 activities conducted during the reporting period include earthwork (site), concrete demolition, asphalt removal, and installation of foundation components, exterior tilt up wall panels, structural steel, roofing, subsurface utilities, and vapor barrier. Demolished concrete and asphalt were stockpiled on the Retail Redevelopment area of the Site. During the next reporting period, Duke anticipates Building 11 will be substantially completed. The anticipated construction schedule for Building 11was provided in Remedial Action Progress Report No 17.

Fill Material Import

As discussed in previous reports, Duke has imported structural fill material from off-site sources for use in redevelopment activities. During the reporting period, approximately 2,697 tons of material were imported from the following source for use in the Industrial #1 and #2 Redevelopment Areas of the site since March 1, 2016. Import quantities for January and February 2016 were included in the fill material import totals presented in Remedial Action Progress Report No. 26 for the Industrial #1 Redevelopment Area.

1. Trap Rock Industries, LLC. Kingston Quarry. 3,631tons of crushed stone (virgin source), 475 DeMott Lane, Sommerset, NJ 08528

The Kingston Quarry material consists of clean, native, virgin crushed stone. As such, characterization sampling is not required pursuant to the RAWP.

Groundwater

The RAWP for the Industrial #2 Redevelopment Area was limited to soils. Groundwater actions, if any, are related to resolution of the disputed groundwater issue between the Site and neighboring Merck Pharmaceutical facility. NJDEP reviewed Linden Development's (now Duke Linden's) latest investigation report prepared by Hull related to the disputed groundwater issue (i.e., MW-97 Monitoring Well Cluster Installation and Supplemental Groundwater Sampling Report, July 2012). NJDEP issued a technical comment letter dated November 30, 2012 outlining the findings from the agency review of the July 2012 report. NJDEP's letter indicates that no sources have been identified on the Duke Linden property that created the groundwater contamination in the dispute. The letter requests that Linden Development (now Duke Linden) perform an additional year of groundwater monitoring in the southern portion of the site. A work plan for the groundwater sampling was submitted to NJDEP in late-March 2013. A revised work plan for groundwater sampling was submitted in March 2014 to address NJDEP comments on the original version. Duke Linden has completed the quarterly groundwater monitoring pursuant to the March 2014 sampling plan and submitted a Supplemental Quarterly Groundwater Monitoring Report to NJDEP in March 2015.

In April 2015, the additional groundwater sampling was conducted to further monitor groundwater concentration trends, to confirm the December 2014 results that showed a significant decrease in VOCs in a number of wells, collect additional data to further support that impact to the weathered and bedrock groundwater zones are attributable to off-site sources, and to assist in establishing a CEA for the Industrial Redevelopment Areas at the Site. The results of the April 2015 supplemental sampling event were provided to NJDEP in a letter report dated May 19, 2015 under separate cover. In anticipation of Building 11 construction, the report recommended decommissioning a number of monitoring wells in the planned Building 11 area and wells located within the interior of Building 13. On June 19, 2015, the NJDEP Case Manager approved decommissioning of nine shallow overburden wells, four deep overburden wells, six weathered bedrock wells, and eight bedrock wells. The wells were decommissioned between June 21 and June 25, 2015 by Advanced Drilling, Inc. and documented in Progress Report #24 for the Industrial No. 1 Redevelopment Area.

On August 25, 2015, Duke, Hull and JM Sorge met with the NJDEP Case Manger to discuss establishing Classification Exception Areas (CEA) for the Retail and Industrial portions of the site. The groundwater impacts associated with the disputed groundwater area are associated with off-site sources. Based on the meeting, a groundwater permit and CEA will be established for the overburden groundwater zones over a portion of the Industrial #1 and #2 Development Areas in the AOI-6 area. Additional groundwater sampling of select wells is necessary to support the monitored natural attenuation remedy. The monitoring wells selected to be monitored were MW-18S, MW-22S, MW-39S, MW-96S, BEC-9D, MW-35D, MW-91D, MW-92D, MW-93D, MW-95D, and MW-96D. These wells were sampled during the February 2016 sampling event. Based on further conversations with the NJDEP Case Manager on February 8 and 18, 2016, three additional shallow overburden wells will be installed to replace MW-21S, MW-25S and MW-50S following completion of Building 11 and monitored in the future. Groundwater analytical results from the February 2016 sampling event are provided in Attachment B.

There are a number of monitoring wells on the Industrial #1 and #2 Redevelopment Areas of the site that are no longer being utilized for monitoring. Duke Linden requested approval from the NJDEP Case Manager to decommission these wells. The list of wells approved for decommissioning on the Industrial #1 and #2 Redevelopment portions of the site by the NJDEP Case Manager via email on March 7, 2016 are:

Shallow Overburden	Deep Overburden	Weathered Bedrock	Bedrock
BEC-1SR	BEC-1D	MW-14W	MW-16B
BEC-9S	BEC-4D	MW-16W	MW-43B
BEC-13S	MW-31D	MW-42W	MW-45B
BEC-14S	MW-49D	MW-44W	MW-49B
MW-16S		MW-45W	MW-49B4
MW-57S		MW-49W	MW-50B
MW-68S		MW-50W	MW-57B
MW-70S		MW-57W	MW-59B
		MW-59W	MW-66B
		MW-66W	MW-97B
		MW-68W	
		MW-70W	
		MW-93W	
		MW-94W	
		MW-95W	
		MW-96W	
		MW-97W	

The aforementioned monitoring wells are anticipated to be decommissioned during the next reporting period.

Storm Sewer (AOI-18)
Remedial activities associated with AOI-18 are complete, as documented to NJDEP in previous reporting efforts associated with the neighboring Retail and Industrial #1 Redevelopment Areas. Specifically, the storm sewer activities were documented in *Remedial Action Progress Report No. 1 for the Retail Redevelopment Area Portion of the Former General Motors Linden Assembly Plant*, dated November 23, 2009 and in *Remedial Action Progress Report No. 1 for the Industrial No. 1 Redevelopment Area Portion of the Former General Motors Linden Assembly Plant*, also dated November 23, 2009.

2. ***NJDEP requires discussion of problems and delays in the implementation of the RAWP, which should include proposals for corrections.***

As discussed above, a majority of the remedial activities are directly-related to construction activities associated with the future redevelopment at the Site which is dependent upon establishment of agreements with end users. The construction activities described in the RAWP, with the exception of the AOI-7 excavation activities, had not been implemented due to economic conditions until recently. During the current reporting period, Duke Linden continued earthwork and construction activities for Building 11. The Building 11 area will occupy Industrial # 2 Redevelopment Area and the remainder of the Industrial #1 Redevelopment Area. Upon completion of Building 11, the relied upon engineering controls (e.g., building slabs, asphalt cover, etc.) in the RAWP will have been implemented to eliminate exposure of Site receptors to potential contaminants in Site soils.

3. ***NJDEP requires proposals for a deviation from, or modification to, the approved RAWP.***

No deviations from, or modifications to, the approved RAWP are planned or required at this time.

4. ***NJDEP requires submittal of a revised schedule pursuant to N.J.A.C. 7:26E-6.5, to reflect the changes as noted in 1 through 3 above.***

The targeted excavation activities within AOI-7 were completed in April 2012.

Duke Linden continued Building 11 construction during the current reporting period. A preliminary construction schedule for Building 11 was provided in Remedial Action Progress Report No. 16 and an updated Building 11 construction schedule was included in Progress Report No. 17.

5. ***NJDEP requires an updated status of all permit applications relative to the critical path schedule.***

The permits required for initiation of the remedial activities are summarized below.

Permit/Approval Type	Status	Notes
Planning Board Approval	Approved 11/17/08	Site plan approved by City of Linden Planning Board
NPDES Permit (Storm Water)	Approved 9/16/09	NPDES Permit No. 0088323
Soil Conservation District	Approved 9/16/09	Approved by Somerset-Union Conservation District
Building Permit for Building 11	Approved 9/24/15	

6. ***NJDEP requires a listing of each remedial action to be performed during the next reporting period.***

Construction activities related to Building 11 continued during this reporting period. During the next reporting period, primary construction activities related to Building 11 are anticipated to be substantially completed. This includes the engineering controls (building slabs, parking areas and roadways and placing one foot of clean soil in greenspaces) in the approved RAWP.

7. ***NJDEP requires costs of each remedial action***
   - ***i. Annual summary of all remedial action costs incurred to date; and***
   - ***ii. Revised cost estimate for remedial actions remaining to be performed.***

Given that significant construction and remedial implementation has not yet commenced, no significant remedial costs have been accrued in Industrial No. 2, with the exception of costs for the storm sewer cleaning (i.e., approximately $7,000) and the previously completed AOI-7 excavation project. The costs for the AOI-7 activities totaled approximately $240,000 at project completion, which is below the amount used in the current remediation cost estimate.

The overall cost estimate for completing remedial activities remains consistent with that presented in the RAWP (i.e., approximately $11,900,000 for earthwork and construction of engineering controls).

8. ***NJDEP requires a tabulation of sampling results [according to N.J.A.C. 7:26E-3.13(c)(3)] received during the reporting period and a summary of the data and any conclusions, presented in a format consistent with N.J.A.C. 7:26E-4.8.***

No soil sampling results were received during the reporting period. A groundwater sampling event was conducted between February 22 and 24, 2016. The laboratory report and tabulated groundwater analytical results from the February sampling event are provided in Attachment B.

9. ***NJDEP requires a summary of active groundwater remedial actions***
   - *i.* ***Groundwater elevation maps with groundwater flow shown immediately before and during active groundwater remediation;***
   - *ii.* ***Graphs depicting changes in concentrations over time for all impacted wells as well as all down-gradient wells;***
   - *iii.* ***Summary of volume of water treated since last reporting period and the total volume treated since active remedial action commenced; and***
   - *iv.* ***Summary of groundwater contamination, indicating either that contamination remains above applicable standards (include a proposal detailing additional remedial actions) or that concentrations are below applicable standards.***

The RAWP for the Industrial #2 Redevelopment Area was limited to soils only. Therefore, this section is not applicable.

10. ***NJDEP requires a summary of natural remediation groundwater remedial actions***
   - *i.* ***Summary table of the groundwater monitoring results collected; and***
   - *ii.* ***Conclusions whether data indicate that natural remediation is no longer appropriate (must then also submit a revised RAWP).***

The RAWP for the Industrial #2 Redevelopment Area was limited to soils only. Therefore, this section is not applicable.

11. ***NJDEP requires a description of all wastes generated as a result of the remedial action***
   - *i.* ***Tabulation of waste characterization samples collected, including the physical state of the material, volume, number of samples, analyses performed and results;***
   - *ii.* ***Listing of types and quantities of waste generated by the remedial action during the reporting period as well as to date;***
   - *iii.* ***Name of the disposal facility used;***
   - *iv.* ***Transporters' dates of disposal; and***
   - *v.* ***Manifest numbers of each waste shipment.***

During the current reporting period, investigative derived waste (IDW) from the February 2016 groundwater sampling event was generated. Waste characterization samples of the IDW were collected and the analytical results are included in Attachment C. Disposal documentation (manifests) will be provided in the next quarterly report for the Industrial #1 and Retail Redevelopment Areas.

12. ***NJDEP requires that any additional support documentation that is available also be provided (photos, etc.).***

Photographs showing Building 11 construction activities are in included in Attachment D.

The next scheduled remedial action progress report will include remedial actions completed between April 1, 2016 and June 30, 2016. Please feel free to contact Raymond Kennedy at (614) 793-8777 with any questions regarding the update provided herein.

Sincerely,

Raymond Kennedy
Senior Project Manager

Attachments

ct: Clifford Ng – U.S. EPA Region 2
David Jennings – Duke Linden LLC
Joseph M. Sorge – J.M. Sorge, Inc.

ATTACHMENT A

Report Certification

Certification

Duke Linden, LLC
ISRA Case Number E20040531-Industrial

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statue, I am personally liable for the penalties.

Duke Linden, LLC, a Delaware limited liability company

By: Duke Realty Limited Partnership, an Indiana limited partnership, its sole member

By: Duke Realty Corporation, an Indiana corporation, sole general partner

Date: April 5, 2016

By: _____
John Van Vliet
Vice President, Construction

Sworn to and subscribed to before me on this 5th day of April, 2016

Tammy B. Glasgow
Notary

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
TAMMY B GLASGOW
Notary Public
CONSHOHOCKEN BORO, MONTGOMERY COUNTY
My Commission Expires Jan 7, 2020

ATTACHMENT B

Groundwater Analytical Results

Groundwater Analytical Results - Duke Linden NJ Industrial Area

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SUMMARY OF ANALYTICAL RESULTS: 460-109350-1
Job Description: Duke Linden NJ, February 2016 Industrial Area
For:
Former GM Linden Site
1016 W. Edgar Road
Linden, NJ

Client ID	Higher of NJ PQLs and GW Quality Criterion 2015	DUK059:MW-91W:G022316			DUK059:MW-91W:G022316A			DUK059:BEC-9D:G022316			DUK059:MW-98S:G022316			DUK059:MW-93D:G022316			DUK059:MW-39S:G022316		
Lab Sample ID		460-109350-1			460-109350-2			460-109350-3			460-109350-4			460-109350-5			460-109350-6		
Sampling Date		02/23/2016 08:26:00			02/23/2016 08:26:00			02/23/2016 09:26:00			02/23/2016 10:26:00			02/23/2016 11:26:00			02/23/2016 09:36:00		
Matrix		Water			Water-Duplicate sample			Water			Water			Water			Water		
Dilution Factor		1			1			1			1			1			1		
Unit	ug/l	ug/l			ug/l			ug/l			ug/l			ug/l			ug/l		
VOA-8260C-WATER		Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 8260C																			
1,1,1-Trichloroethane	30	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28
1,1,2,2-Tetrachloroethane	1	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19
1,1,2-Trichloroethane	3	0.35	J	0.08	0.26	J	0.08	0.08	U	0.08	0.08	U	0.08	0.08	U	0.08	0.08	U	0.08
1,1-Dichloroethane	50	0.69	J	0.24	0.64	J	0.24	0.24	U	0.24	0.24	U	0.24	0.55	J	0.24	0.24	U	0.24
1,1-Dichloroethene	1	**1.5**		0.34	**1.5**		0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34
1,2,4-Trichlorobenzene	9	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27	0.33	J	0.27	0.27	U	0.27	0.27	U	0.27
1,2-Dibromo-3-Chloropropane	0.02	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23
1,2-Dibromoethane	0.03	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19
1,2-Dichlorobenzene	600	33		0.22	32		0.22	0.22	U	0.22	9.5		0.22	5.1		0.22	0.22	U	0.22
1,2-Dichloroethane	2	**30**		0.25	**28**		0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25
1,2-Dichloropropane	1	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18
1,3-Dichlorobenzene	600	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.34	J	0.33	0.33	U	0.33	0.33	U	0.33
1,4-Dichlorobenzene	75	0.96	J	0.33	0.86	J	0.33	0.33	U	0.33	1.2		0.33	0.59	J	0.33	0.33	U	0.33
2-Butanone	300	2.2	U	2.2	2.2	U	2.2	2.2	U	2.2	2.2	U	2.2	2.2	U	2.2	2.2	U	2.2
2-Hexanone	300	0.72	U	0.72	0.72	U	0.72	0.72	U	0.72	0.72	U	0.72	0.72	U	0.72	0.72	U	0.72
4-Methyl-2-pentanone	NA	0.63	U	0.63	0.63	U	0.63	0.63	U	0.63	0.63	U	0.63	0.63	U	0.63	0.63	U	0.63
Acetone	6000	1.1	U	1.1	1.1	U	1.1	1.1	U	1.1	1.1	U	1.1	1.1	U	1.1	1.1	U	1.1
Benzene	1	**55**		0.09	**52**		0.09	0.09	U	0.09	**3.1**		0.09	**110**		0.09	0.09	U	0.09
Bromodichloromethane	1	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15
Bromoform	4	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18
Bromomethane	10	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18
Carbon disulfide	700	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.52	J	0.22	0.22	U	0.22
Carbon tetrachloride	1	**1.8**		0.33	**1.7**		0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33
Chlorobenzene	50	**120**		0.24	**110**		0.24	0.24	U	0.24	0.24	U	0.24	2.2		0.24	0.24	U	0.24
Chloroethane	5	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37
Chloroform	70	12		0.22	12		0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
Chloromethane	NA	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
cis-1,2-Dichloroethene	70	**72**		0.26	68		0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26
cis-1,3-Dichloropropene	NA	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16
Cyclohexane	NA	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	16		0.26	31		0.26	0.26	U	0.26
Dibromochloromethane	1	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
Dichlorodifluoromethane	1000	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14
Ethylbenzene	700	0.3	U	0.3	0.3	U	0.3	0.3	U	0.3	110		0.3	93		0.3	0.3	U	0.3
Freon TF	20000	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34
Isopropylbenzene	700	0.32	U	0.32	0.32	U	0.32	0.32	U	0.32	11		0.32	26		0.32	0.32	U	0.32
Methyl acetate	7000	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58
Methylcyclohexane	NA	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	3.1		0.22	6.4		0.22	0.22	U	0.22
Methylene Chloride	3	**4.3**		0.21	4		0.21	0.21	U	0.21	0.21	U	0.21	0.24	J	0.21	0.21	U	0.21
MTBE	70	0.75	J	0.13	0.68	J	0.13	0.13	U	0.13	0.13	U	0.13	0.94	J	0.13	2.4		0.13
Styrene	100	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17
Tetrachloroethene	1	**3.9**		0.12	**3.6**		0.12	0.12	U	0.12	0.12	U	0.12	0.12	U	0.12	0.12	U	0.12
Toluene	600	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.51	J	0.25	1.8		0.25	0.25	U	0.25
trans-1,2-Dichloroethene	100	7.6		0.18	7.2		0.18	0.18	U	0.18	0.18	U	0.18	3.1		0.18	0.18	U	0.18
trans-1,3-Dichloropropene	NA	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19
Trichloroethene	1	**100**		0.22	**94**		0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
Trichlorofluoromethane	2000	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15
Vinyl chloride	1	**25**		0.06	**25**		0.06	0.06	U	0.06	0.06	U	0.06	**3**		0.06	0.06	U	0.06
Xylenes, Total	1000	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.7	J	0.28	14		0.28	0.28	U	0.28
Total Conc	NA	468.85			441.34			0			155.78			298.44			2.4		

Highlighted Concentrations shown in bold type face exceed limits
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

Groundwater Analytical Results - Duke Linden NJ Industrial Area

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SUMMARY OF ANALYTICAL RESULTS: 460-109350-1
Job Description: Duke Linden NJ, February 2016 Industrial Area
For:
Former GM Linden Site
1016 W. Edgar Road
Linden, NJ

Client ID		DUK059:MW-95D:G022316			DUK059:MW-92D:G022316			DUK059:MW-96D:G022316			DUK059:EB-1:W022316			DUK059:TB-1:W022316		
Lab Sample ID	Higher of NJ PQLs and GW Quality Criterion 2015	460-109350-7			460-109350-8			460-109350-9			460-109350-10			460-109350-11		
Sampling Date		02/23/2016 10:46:00			02/23/2016 11:51:00			02/23/2016 12:41:00			02/23/2016 08:45:00			02/23/2016 08:46:00		
Matrix		Water			Water			Water			Water - Equip. Blank			Water - trip Blank		
Dilution Factor		5			1			10			1			-1		
Unit	ug/l	ug/l			ug/l			ug/l			ug/l			ug/l		
VOA-8260C-WATER		Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 8260C																
1,1,1-Trichloroethane	30	1.4	U	1.4	0.28	U	0.28	2.8	U	2.8	0.28	U	0.28	0.28	U	0.28
1,1,2,2-Tetrachloroethane	1	0.95	U	0.95	0.19	U	0.19	1.9	U	1.9	0.19	U	0.19	0.19	U	0.19
1,1,2-Trichloroethane	3	0.4	U	0.4	0.08	U	0.08	0.8	U	0.8	0.08	U	0.08	0.08	U	0.08
1,1-Dichloroethane	50	1.2	U	1.2	2.6		0.24	2.4	U	2.4	0.24	U	0.24	0.24	U	0.24
1,1-Dichloroethene	1	1.7	U	1.7	**1.2**		0.34	3.4	U	3.4	0.34	U	0.34	0.34	U	0.34
1,2,4-Trichlorobenzene	9	1.4	U	1.4	0.27	U	0.27	2.7	U	2.7	0.27	U	0.27	0.27	U	0.27
1,2-Dibromo-3-Chloropropane	0.02	1.2	U	1.2	0.23	U	0.23	2.3	U	2.3	0.23	U	0.23	0.23	U	0.23
1,2-Dibromoethane	0.03	0.95	U	0.95	0.19	U	0.19	1.9	U	1.9	0.19	U	0.19	0.19	U	0.19
1,2-Dichlorobenzene	600	4.3	J	1.1	1.6		0.22	3.8	J	2.2	0.22	U	0.22	0.22	U	0.22
1,2-Dichloroethane	2	1.3	U	1.3	**2.4**		0.25	2.5	U	2.5	0.25	U	0.25	0.25	U	0.25
1,2-Dichloropropane	1	0.9	U	0.9	0.18	U	0.18	1.8	U	1.8	0.18	U	0.18	0.18	U	0.18
1,3-Dichlorobenzene	600	1.7	U	1.7	0.33	U	0.33	3.3	U	3.3	0.33	U	0.33	0.33	U	0.33
1,4-Dichlorobenzene	75	1.7	U	1.7	0.33	U	0.33	3.3	U	3.3	0.33	U	0.33	0.33	U	0.33
2-Butanone	300	97		11	2.2	U	2.2	46	J	22	2.2	U	2.2	2.2	U	2.2
2-Hexanone	300	3.6	U	3.6	0.72	U	0.72	7.2	U	7.2	0.72	U	0.72	0.72	U	0.72
4-Methyl-2-pentanone	NA	650		3.2	0.63	U	0.63	320		6.3	0.63	U	0.63	0.63	U	0.63
Acetone	6000	190		5.4	1.1	U	1.1	100		11	1.1	U	1.1	1.1	U	1.1
Benzene	1	**290**		0.45	0.37	J	0.09	**210**		0.9	0.09	U	0.09	0.09	U	0.09
Bromodichloromethane	1	0.75	U	0.75	0.15	U	0.15	1.5	U	1.5	0.15	U	0.15	0.15	U	0.15
Bromoform	4	0.9	U	0.9	0.18	U	0.18	1.8	U	1.8	0.18	U	0.18	0.18	U	0.18
Bromomethane	10	0.9	U	0.9	0.18	U	0.18	1.8	U	1.8	0.18	U	0.18	0.18	U	0.18
Carbon disulfide	700	1.1	U	1.1	0.22	U	0.22	2.2	U	2.2	0.22	U	0.22	0.22	U	0.22
Carbon tetrachloride	1	1.7	U	1.7	0.33	U	0.33	3.3	U	3.3	0.33	U	0.33	0.33	U	0.33
Chlorobenzene	50	1.2	U	1.2	3.7		0.24	2.4	U	2.4	0.24	U	0.24	0.24	U	0.24
Chloroethane	5	1.9	U	1.9	0.37	U	0.37	3.7	U	3.7	0.37	U	0.37	0.37	U	0.37
Chloroform	70	1.1	U	1.1	0.22	U	0.22	2.2	U	2.2	0.22	U	0.22	0.22	U	0.22
Chloromethane	NA	1.1	U	1.1	0.22	U	0.22	2.2	U	2.2	0.22	U	0.22	0.22	U	0.22
cis-1,2-Dichloroethene	70	20		1.3	13		0.26	12		2.6	0.26	U	0.26	0.26	U	0.26
cis-1,3-Dichloropropene	NA	0.8	U	0.8	0.16	U	0.16	1.6	U	1.6	0.16	U	0.16	0.16	U	0.16
Cyclohexane	NA	120		1.3	0.26	U	0.26	**87**		2.6	0.26	U	0.26	0.26	U	0.26
Dibromochloromethane	1	1.1	U	1.1	0.22	U	0.22	2.2	U	2.2	0.22	U	0.22	0.22	U	0.22
Dichlorodifluoromethane	1000	0.7	U	0.7	0.14	U	0.14	1.4	U	1.4	0.14	U	0.14	0.14	U	0.14
Ethylbenzene	700	460		1.5	0.3	U	0.3	**290**		3	0.3	U	0.3	0.3	U	0.3
Freon TF	20000	1.7	U	1.7	0.34	U	0.34	3.4	U	3.4	0.34	U	0.34	0.34	U	0.34
Isopropylbenzene	700	33		1.6	0.32	U	0.32	19		3.2	0.32	U	0.32	0.32	U	0.32
Methyl acetate	7000	2.9	U	2.9	0.58	U	0.58	5.8	U	5.8	0.58	U	0.58	0.58	U	0.58
Methylcyclohexane	NA	31		1.1	0.22	U	0.22	44		2.2	0.22	U	0.22	0.22	U	0.22
Methylene Chloride	3	1.1	U	1.1	0.21	U	0.21	2.1	U	2.1	7.1		0.21	0.21	U	0.21
MTBE	70	0.65	U	0.65	0.73	J	0.13	1.3	U	1.3	0.13	U	0.13	0.13	U	0.13
Styrene	100	2.1	J	0.85	0.17	U	0.17	2.1	J	1.7	0.17	U	0.17	0.17	U	0.17
Tetrachloroethene	1	0.6	U	0.6	0.72	J	0.12	1.2	U	1.2	0.12	U	0.12	0.12	U	0.12
Toluene	600	**1,400**		1.3	0.25	U	0.25	**2000**		2.5	0.25	U	0.25	0.25	U	0.25
trans-1,2-Dichloroethene	100	32		0.9	1.3		0.18	9.6	J	1.8	0.18	U	0.18	0.18	U	0.18
trans-1,3-Dichloropropene	NA	0.95	U	0.95	0.19	U	0.19	1.9	U	1.9	0.19	U	0.19	0.19	U	0.19
Trichloroethene	1	**44**		1.1	**18**		0.22	**60**		2.2	0.22	U	0.22	0.22	U	0.22
Trichlorofluoromethane	2000	0.75	U	0.75	0.15	U	0.15	1.5	U	1.5	0.15	U	0.15	0.15	U	0.15
Vinyl chloride	1	**6.8**		0.3	**1.8**		0.06	**11**		0.6	0.06	U	0.06	0.06	U	0.06
Xylenes, Total	1000	**2,500**		1.4	0.28	U	0.28	**1,600**		2.8	0.28	U	0.28	0.28	U	0.28
Total Conc	NA	5,880.2			47.42			4,814.5			7.1			0		

Highlighted Concentrations shown in bold type face exceed limits
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SUMMARY OF ANALYTICAL RESULTS: 460-109234-1
Job Description: Duke Linden NJ, February 2016 Industrial Area

For:
Former GM Linden Site
1016 W. Edgar Road
Linden, NJ

Client ID	Higher of NJ PQLs and GW Quality Criterion 2015	DUK059:MW-81D:G022216			DUK059:MW-18S:G022216			DUK059:MW-22S:G022216			DUK059:MW-35D:G022216			DUK059:EB-1:W022216			DUK059:TB-1:W022216		
Lab Sample ID		460-109234-1			460-109234-2			460-109234-3			460-109234-4			460-109234-5			460-109234-6		
Sampling Date		02/22/2016 09:51:00			02/22/2016 10:51:00			02/22/2016 09:36:00			02/22/2016 10:51:00			02/22/2016 11:00:00			02/22/2016 11:01:00		
Matrix		Water			Water			Water			Water			Water - Equip. Blank			Water - Trip Blank		
Dilution Factor		1			1			1			1			1			1		
Unit	ug/l	ug/l			ug/l			ug/l			ug/l			ug/l			ug/l		
VOA-8260C-WATER		Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 8260C																			
1,1,1-Trichloroethane	30	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28
1,1,2,2-Tetrachloroethane	1	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19
1,1,2-Trichloroethane	3	0.08	U	0.08	0.08	U	0.08	0.08	U	0.08	0.08	U	0.08	0.08	U	0.08	0.08	U	0.08
1,1-Dichloroethane	50	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24
1,1-Dichloroethene	1	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34
1,2,4-Trichlorobenzene	9	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27	0.27	U	0.27
1,2-Dibromo-3-Chloropropane	0.02	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23	0.23	U	0.23
1,2-Dibromoethane	0.03	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19
1,2-Dichlorobenzene	600	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
1,2-Dichloroethane	2	1.3		0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25
1,2-Dichloropropane	1	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18
1,3-Dichlorobenzene	600	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33
1,4-Dichlorobenzene	75	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33	0.33	U	0.33
2-Butanone	300	2.2	U*	2.2	2.2	U*	2.2	2.2	U*	2.2	2.2	U*	2.2	2.2	U*	2.2	2.2	U*	2.2
2-Hexanone	300	0.72	U*	0.72	0.72	U*	0.72	0.72	U*	0.72	0.72	U*	0.72	0.72	U*	0.72	0.72	U*	0.72
4-Methyl-2-pentanone	NA	0.63	U*	0.63	0.63	U*	0.63	0.63	U*	0.63	0.63	U*	0.63	0.63	U*	0.63	0.63	U*	0.63
Acetone	6000	1.1	U*	1.1	1.1	U*	1.1	1.1	U*	1.1	1.1	U*	1.1	1.1	U*	1.1	1.1	U*	1.1
Benzene	1	0.09	U	0.09	0.09	U	0.09	0.09	U	0.09	0.09	U	0.09	0.09	U	0.09	0.09	U	0.09
Bromodichloromethane	1	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15
Bromoform	4	0.18	U*	0.18	0.18	U*	0.18	0.18	U*	0.18	0.18	U*	0.18	0.18	U*	0.18	0.18	U*	0.18
Bromomethane	10	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18
Carbon disulfide	700	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
Carbon tetrachloride	1	0.33	U*	0.33	0.33	U*	0.33	0.33	U*	0.33	0.33	U*	0.33	0.33	U*	0.33	0.33	U*	0.33
Chlorobenzene	50	1.2		0.24	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24	0.24	U	0.24
Chloroethane	5	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37	0.37	U	0.37
Chloroform	70	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
Chloromethane	NA	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
cis-1,2-Dichloroethene	70	3.4		0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26
cis-1,3-Dichloropropene	NA	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16	0.16	U	0.16
Cyclohexane	NA	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26	0.26	U	0.26
Dibromochloromethane	1	0.22	U*	0.22	0.22	U*	0.22	0.22	U*	0.22	0.22	U*	0.22	0.22	U*	0.22	0.22	U*	0.22
Dichlorodifluoromethane	1000	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14
Ethylbenzene	700	0.3	U	0.3	0.3	U	0.3	0.3	U	0.3	0.3	U	0.3	0.3	U	0.3	0.3	U	0.3
Freon TF	20000	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34	0.34	U	0.34
Isopropylbenzene	700	0.32	U	0.32	0.32	U	0.32	0.32	U	0.32	0.32	U	0.32	0.32	U	0.32	0.32	U	0.32
Methyl acetate	7000	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58	0.58	U	0.58
Methylcyclohexane	NA	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22	0.22	U	0.22
Methylene Chloride	3	0.21	U	0.21	0.21	U	0.21	0.21	U	0.21	0.21	U	0.21	2.5		0.21	0.37	J	0.21
MTBE	70	0.32	J	0.13	0.13	U	0.13	0.13	U	0.13	0.18	J	0.13	0.13	U	0.13	0.13	U	0.13
Styrene	100	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17	0.17	U	0.17
Tetrachloroethene	1	1.1		0.12	0.12	U	0.12	0.12	U	0.12	0.12	U	0.12	0.12	U	0.12	0.12	U	0.12
Toluene	600	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25	0.25	U	0.25
trans-1,2-Dichloroethene	100	0.61	J	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18	0.18	U	0.18
trans-1,3-Dichloropropene	NA	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19	0.19	U	0.19
Trichloroethene	1	14		0.22	0.22	U	0.22	0.22	U	0.22	0.53	J	0.22	0.22	U	0.22	0.22	U	0.22
Trichlorofluoromethane	2000	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15	0.15	U	0.15
Vinyl chloride	1	0.06	U	0.06	0.06	U	0.06	0.06	U	0.06	0.06	U	0.06	0.06	U	0.06	0.06	U	0.06
Xylenes, Total	1000	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28	0.28	U	0.28
Total Conc	NA	21.93			0			0			0.71			2.5			0.37		

Highlighted Concentrations shown in bold type face exceed limits
* : LCS or LCSD is outside acceptance limits.
* : RPD of the LCS and LCSD exceeds the control limits
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

ATTACHMENT C

Waste Characterization Analytical Results

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SUMMARY OF ANALYTICAL RESULTS: 460-109410-1
Job Description: Duke Linden NJ, February. 2016
For:
Former GM Linden Site
1016 W. Edgar Road
Linden, NJ

Client ID	Higher of NJ PQLs and GW Quality Criterion 2015	DUK059:WC-W1:W022416		
Lab Sample ID		460-109410-1		
Sampling Date		02/24/2016 13:00:00		
Matrix		Water		
Dilution Factor		1		
Unit	ug/l	ug/l		
VOA-8260C-WATER		Result	Q	MDL
WATER BY 8260C				
1,1,1-Trichloroethane	30	0.28	U	0.28
1,1,2,2-Tetrachloroethane	1	0.19	U	0.19
1,1,2-Trichloroethane	3	0.08	U	0.08
1,1-Dichloroethane	50	0.24	U	0.24
1,1-Dichloroethene	1	0.34	U	0.34
1,2,4-Trichlorobenzene	9	0.27	U	0.27
1,2-Dibromo-3-Chloropropane	0.02	0.23	U	0.23
1,2-Dibromoethane	0.03	0.19	U	0.19
1,2-Dichlorobenzene	600	0.96	J	0.22
1,2-Dichloroethane	2	0.57	J	0.25
1,2-Dichloropropane	1	0.18	U	0.18
1,3-Dichlorobenzene	600	0.33	U	0.33
1,4-Dichlorobenzene	75	0.33	U	0.33
2-Butanone	300	16		2.2
2-Hexanone	300	0.72	U	0.72
4-Methyl-2-pentanone	NA	37		0.63
Acetone	6000	83		1.1
Benzene	1	**13**		0.09
Bromodichloromethane	1	0.15	U	0.15
Bromoform	4	0.18	U	0.18
Bromomethane	10	0.18	U	0.18
Carbon disulfide	700	0.22	U	0.22
Carbon tetrachloride	1	0.33	U	0.33
Chlorobenzene	50	1.5		0.24
Chloroethane	5	0.37	U	0.37
Chloroform	70	0.22	U	0.22
Chloromethane	NA	0.22	U	0.22
cis-1,2-Dichloroethene	70	2.2		0.26
cis-1,3-Dichloropropene	NA	0.16	U	0.16
Cyclohexane	NA	2.1		0.26
Dibromochloromethane	1	0.22	U	0.22
Dichlorodifluoromethane	1000	0.14	U	0.14
Ethylbenzene	700	12		0.3
Freon TF	20000	0.34	U	0.34
Isopropylbenzene	700	1.2		0.32
Methyl acetate	7000	0.58	U	0.58
Methylcyclohexane	NA	0.22	U	0.22
Methylene Chloride	3	0.21	U	0.21
MTBE	70	0.13	U	0.13
Styrene	100	0.17	U	0.17
Tetrachloroethene	1	**2.1**		0.12
Toluene	600	55		0.25
trans-1,2-Dichloroethene	100	0.99	J	0.18
trans-1,3-Dichloropropene	NA	0.19	U	0.19
Trichloroethene	1	**3.4**		0.22
Trichlorofluoromethane	2000	0.15	U	0.15
Vinyl chloride	1	0.71	J	0.06
Xylenes, Total	1000	57		0.28
Total Conc	NA	288.73		

Highlighted Concentrations shown in bold type face exceed limits
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

ATTACHMENT D

Site Photographs